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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/434,024	11/04/1999	KATSUTOMO TERASHIMA	VX992028	3387

7590 03/11/2004

VARNDELL AND VARNDELL PLLC  
106-A South Columbus Street  
ALEXANDRIA, VA 22314

EXAMINER
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JACKSON, CORNELIUS H

ART UNIT	PAPER NUMBER
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2828

DATE MAILED: 03/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/434,024

Applicant(s)

TERASHIMA ET AL.

Examiner

Cornelius H. Jackson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 November 2003.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 40-52 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 40-52 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

  
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### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Acknowledgment***

1. Acknowledgment is made that applicant's Amendment, filed on 06 November 2003, has been entered. Upon entrance of Amendment, claims 1-39 were cancelled, claims 40-44 were amended and claims 45-52 were added. Claims 40-52 are pending in the present application.

### ***Claim Objections***

2. Claims 49 and 50 are objected to because of the following informalities: The preambles of both claims refer back to the independent claim in which it depends on as an "output control method" instead of a device. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an

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international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 40-44 and 49-52 are rejected under 35 U.S.C. 102(e) as being anticipated by Hofmann et al. (6014398).

Regarding claim 40, Hofmann et al. disclose an excimer laser comprising a chamber device **10**, a gas mixture sealed in the chamber device **10**, the gas mixture being composed of a rare gas selected from the group consisting of Kr and Ar, a buffer gas of Ne, and a halogen gas, **see col. 9, lines 40-50 and claims 1, 2 and 5**; gas supply means for supplying the *mixture gas* to the chamber device (it is inherent that the gas mixture is supply to the chamber by some means) and means for carrying out pulse oscillation, **see col. 3, line 24-col. 4, line 67** in the chamber device **10** by discharges across discharge electrodes to excite the gas mixture to oscillate a pulsed laser; wherein a predetermined amount of Xe gas having a concentration of approximately 10 ppm is supplied from xenon gas supply means to the gas mixture in the chamber device, **see abstract, col. 2, lines 25-43 and col. 10, lines 23-30**, whereby the

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chamber device 10 operates to maximize an output energy of the laser and minimize a dispersion of the output energy.

Regarding claims 41, Hofmann et al. disclose all the stated limitations, **see claims 1, 2 and 5.**

Regarding claims 42-44, it is inherent that the device disclosed by Hofmann et al. uses the method as claimed, therefore the method is rejected on the same basis as the device.

Regarding claims 49-52, Hofmann et al. disclose all the stated limitations, **see col. 9, lines 50-55.**

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 45-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hofmann et al. (6014398) in view of Ishihara et al. (6130904). Regarding claims 45-48, Hofmann et al., as applied to claims 40-44 and 49-52 above, teach all the stated limitations except for an xenon sensor means for detecting an amount of xenon within the chamber device and a controller for controlling the amount of xenon supplied to the chamber. Ishihara et al. teach a sensor means

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**12 and/or 13** for detecting an amount within the chamber device and a controller **10** for controlling the amount of xenon supplied to the chamber. It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the sensor means and the controller as taught in Ishihara et al. in the gas system of Hofmann et al. such that the amount of Xe fed into laser chamber is a prescribed amount, **see col. 8, lines 36-58**.

### ***Response to Arguments***

7. Applicant's arguments filed 06 November 2003 have been fully considered but they are not persuasive. Applicant has argued the following:

a. Hofmann does not disclose every aspect of the invention as set forth in the present claims, e.g. the teachings of Hofmann do not explain how xenon is supplied therein.

b. Hofmann is rebutted and overcome by the unexpected advantages achieved by the presently claimed invention, e.g. the amounts of xenon gas in the laser gas mixture.

c. The teachings of Hofmann also do not anticipate a method including a concentration sensing step for detecting the concentration of xenon.

d. Hofmann proposes about 30 ppm of Xe for KrF lasers instead of 10 ppm.

In response:

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a. Hofmann discloses every aspect of the invention as set forth in the present claims, since Hofmann teaches the novelty of Applicant's invention, which is the addition of xenon gas into an excimer laser, and the operation of such lasers was known (common knowledge, within the skill of one ordinary) in the art at the time Hofmann filed for a patent.

b. Hofmann teaches the unexpected advantages achieved by the presently claimed invention, e.g. the amounts of xenon gas in the laser gas mixture.

c. It is inherent that Hofmann includes a concentration sensing step for detecting the concentration of xenon in order for Hofmann to know the concentration of xenon within the chamber.

d. Hofmann proposes about 30 ppm of Xe (**as an example see col. 7, line 20-col. 8, line 5**) but recommends for KrF lasers less than 30-40 ppm and that a 8 ppm of xenon in a KrF laser would reduce pulse energy by 8%, **see abstract, col. 9, lines 40-55 and col. 10, lines 26-30.**

### ***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cornelius H. Jackson whose telephone number is (571)272-1942. The examiner can normally be reached on 8:00 - 5:00, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (571)272-1941. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.




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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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